GOAL 2
CLEAN AND SAFE WATER

Ensure drinking water is safe. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants, and wildlife.

Over the 30 years since enactment of the Clean Water and Safe Drinking Water Acts, government, citizens, and the private sector have worked together to make dramatic progress in improving the quality of surface waters and drinking water.

Thirty years ago, many of the Nation's drinking water systems provided water to the tap with either very limited treatment (usually disinfection) or no treatment at all. Drinking water was too often the cause of acute illnesses linked to microbiological contaminants or of longer-term health problems resulting from exposure to low levels of toxic and other contaminants. Today, drinking water systems monitor the quality of the water they provide and treat water to assure compliance with drinking water standards covering a wide range of contaminants. In addition, sources of drinking water are better protected. We now regulate disposal of wastes to ground waters that are potential sources of drinking water.

Thirty years ago, about two-thirds of the surface waters assessed by states were not attaining basic water quality goals and were considered polluted. Some of the Nation's waters were open sewers posing health risks and many waterbodies were so polluted that traditional uses, such as swimming, fishing, and recreation, were impossible. Today, the number of polluted waters has been dramatically reduced and many clean waters are even healthier. A massive investment of federal, state, and local funds resulted in a new generation of sewage treatment facilities able to provide "secondary" treatment or better. Over 50 categories of industry now comply with nationally consistent discharge regulations. In addition, sustained efforts to implement "best management practices" have significantly slowed runoff of pollutants from diffuse or "nonpoint" sources and resulted in measurable improvement in waterbodies nationwide.

Cleaner, safer water has renewed recreational, ecological, and economic interests in communities across the Nation. The recreation and tourism industry is the second largest employer in the Nation and a significant portion of recreational spending comes from swimming, boating, sport fishing, and hunting. Each year, Americans take over 1.8 billion trips to water destinations, largely for recreation. American fishermen spend some $24 billion annually and generate over $69 billion for the economy. Commercial fishing and shellfishing, both of which rely on clean water, contribute some $45

billion to the economy.

The dramatic restoration of some of the Nation's most polluted waters has paid large dividends in enhanced recreation, healthier fisheries, and stronger local economies. The Cuyahoga River, which once caught fire, is now busy with boats and harbor businesses that generate substantial revenue for the City of Cleveland. The Willamette River in Oregon has been restored to provide swimming, fishing, and water sports. Even Lake Erie, once infamous for its dead fish, now supports a $600 million per year fishing industry.

Despite improvements in the quality of water, serious water pollution and drinking water problems remain. Population growth continues to generate higher levels of water pollution and places greater demand on drinking water systems. To further our progress toward cleaner surface waters and safer drinking water, we must both maintain our commitment to the core measures we have already established and look for new ways to improve water quality and protect human health.

OBJECTIVES

Objective 2.1: Protect Human Health. By 2008, protect human health by reducing exposure to contaminants in drinking water, in fish and shellfish, and in recreational waters.

Sub-objective 2.1.1: Water Safe To Drink. By 2008, 95% of the population served by community water systems will receive drinking water that meets all applicable health-based drinking water standards. (2002 Baseline: 93.6% of population; note that year-to-year performance is expected to change over time as new standards take effect.)[1]

Strategic Targets:

- Increase Population Served Water Meeting Pre-2001 and Post-2001 Standards: By 2008, the percentage of the population served by community water systems that receive drinking water that meets health-based standards:

[1] Note: EPA will continue to consider how best to treat non-reporting systems in this Sub-objective and in supporting Strategic Targets. Options include treating non-reporting systems as in compliance, treating non-reporting systems as not in compliance, or excluding non-reporting systems from the compliance calculation. The targets shown here represent how EPA has calculated this baseline in the past and are based on the first approach. In addition, EPA would like comment on the most appropriate definitions of non-reporting (e.g. how to consider late reporting).

  - with which systems need to comply as of December 2001 will be 95% (2002 Baseline: 93.6% of the population); and

  - with a compliance date of January 2002 or later will be 80% (2002 Baseline: % of population to be determined May 2003; covered standards include: Stage 1 disinfection by-products/interim enhanced surface water treatment rule/long-term enhanced surface water treatment rule/arsenic; year-to-year performance is expected to change as new standards take effect.)

- Increase Community Water Systems Meeting Pre-2001 and Post-2001 Standards: By 2008, the percentage of community water systems that provide drinking water that meets health-based standards:

  - with which systems need to comply as of December 2001 will be 95% (2002 Baseline: 91.6% of community water systems); and

  - with a compliance date of January 2002 or later will be 80% (2002 Baseline: xx% of community water systems; to be determined May 2003; covered standards include: Stage 1 disinfection by-products/interim enhanced surface water treatment rule/long-term enhanced surface water treatment rule/arsenic; year-to-year performance is expected to change as new standards take effect.)

- Increase Population in Indian Country Receiving Safe Water: By 2008, 95% of the population served by community water systems in Indian country will receive drinking water that meets all applicable health-based drinking water standards. (2002 Baseline: 91.1% of population served by systems; year-to-year performance is expected to change as new standards take effect.)

- Reduce Vulnerability of Source Waters to Contamination: By 2008, implementation of source water contamination prevention strategies by states and tribes reduces to xx% the percentage of source water areas (both surface and ground water) identified as highly or moderately vulnerable to contamination. (2002 Baseline: to be determined)

- Improve Access to Safe Drinking Water: By 2008, reduce by xx% the number of households on tribal lands or in Alaskan Native Villages lacking

access to basic sanitation. (2000 Baseline: U.S. Census data indicate that xx% of households lack access to complete plumbing including hot and cold piped water, flush toilet, or a bathtub/shower.)

Sub-objective 2.1.2: Fish and Shellfish Safe to Eat. By 2008, the quality of water and sediments will be improved to allow increased consumption of safe fish and shellfish as measured by the strategic targets described below.

Strategic Targets:

- Fish Safe to Eat: By 2008, the quality of water and sediments will be improved to allow increased consumption of safe fish in not less than 3% of the water miles/acres identified by states or tribes as having a fish consumption advisory in 2002. (2002 Baseline: 485,205 river miles and 11,277,276 lake acres were identified by states or tribes in 2002 as having fish with chemical contamination levels resulting in an advisory of potential human health risk from consumption.)

- Increase Acres Safe for Shellfishing: By 2008, 85% of the shellfish growing acres monitored by states are approved for use. (1995 Baseline: 77% approved for use of 21.6 million acres monitored; 69% approved and 8% conditionally approved.)

Sub-objective 2.1.3: Water Safe for Swimming. By 2008, restore water quality to allow swimming in not less than 10% of the stream miles and lake acres identified by states in 2000 as having water quality unsafe for swimming. (2000 Baseline: approximately 90,000 stream miles and 2.6 million lake acres reported by states as not meeting a primary contact recreational use in the 2000 reports under section 305(b) of the Clean Water Act.)

Strategic Targets:

- Reduce Disease Outbreaks Attributable to Recreational Waters: By 2008, the quality of recreational waters nationwide will be protected so that the number of waterborne disease outbreaks attributable to swimming in, or other recreational contact with, the ocean, rivers, lakes, or streams will be reduced to not more than 8, measured as a five year average. (2002 Baseline: an average of 9 recreational contact waterborne disease outbreaks reported per year by the Centers for Disease Control over the years 1994 - 1998; adjusted by the Heinz Center to remove outbreaks associated with waters other than natural surface [e.g., removed outbreaks associated with pools, water parks, etc.].)

- Reduce Beach Closures and Advisories: By 2008, coastal and Great Lakes beaches monitored by State beach safety programs will be open and safe for swimming in over 96% of the days of the beach season. (2002 Baseline: monitored beaches open 94% of the days of the beach season.)

Means and Strategies to Achieve Objective 1

Protecting and Improving Drinking Water

Safe drinking water and clean surface waters are critical to protecting human health. Over 260 million Americans rely on the safety of tap water provided by water systems that comply with national drinking water standards. EPA's strategy for assuring safe drinking water over the next several years includes four key elements: (1) developing or revising drinking water standards; (2) supporting states, tribes, and water systems in implementing standards; (3) developing sustainable management of drinking water infrastructure; and (4) protecting sources of drinking water from contamination.

Develop Drinking Water Standards

The Safe Drinking Water Act directs EPA to establish national standards for contaminants in drinking water provided to consumers by water systems. Over the past 30 years, EPA has established standards for some 91 contaminants. Over the next several years, EPA expects to establish additional standards for microbial contaminants, disinfectants, and disinfection by-products and for total coliform bacteria found in distribution systems.

Through 2008, EPA will continue to assess the need for new or revised drinking water standards. Based on recommendations from the National Research Council, the National Drinking Water Advisory Council, and other stakeholders, the Agency will continue to evaluate health effects data and risks of exposure to contaminants, information on technologies for detecting and removing contaminants, and compliance costs. If there is adequate information, EPA will determine whether a new risk-based drinking water standard is necessary, or revision to an existing standard is warranted. Where the source of the contamination is surface water, the Agency will also consider applying the pollution control authorities of the Clean Water Act, including development of water quality criteria for human health under Section 304 of the Act. These criteria, once adopted by states and authorized tribes, form the basis for limits on discharges of the contaminants to surface waters and guide programs to reduce runoff.

Implement Drinking Water Regulations

EPA works closely with states, tribes, and water systems to assure the full and effective implementation of drinking water standards and to support the highest possible rate of compliance with standards. Over the next 5 years, EPA will provide guidance, training and technical assistance to states, tribes and systems; ensure proper certification of water system operators; and promote consumer awareness of the safety of drinking water supplies.

Small community water systems are more likely to have difficulty complying with drinking water standards. Consistent with the Agency's Small Systems Strategy, EPA will provide training and assistance addressing the use of cost-effective treatment technologies, proper waste disposal, and compliance with standards for high-priority contaminants, including arsenic in drinking water and microbes, disinfectants, and disinfection by-products.

High quality information is needed to support the effective implementation of drinking water standards. The Safe Drinking Water Information System serves as the primary source of national information on compliance with all Safe Drinking Water Act requirements, and is a critical database for program management. EPA will work to ensure that all applicable drinking water regulatory requirements are incorporated into this new data system to help states and authorized tribes manage their drinking water programs. EPA will also continue to work with states and others to improve data completeness, accuracy, timeliness, and consistency.

Support Sustainable Drinking Water Infrastructure

Providing drinking water that meets safe standards often requires an investment in the construction or maintenance of infrastructure. The Drinking Water State Revolving Fund (DWSRF) provides water systems with low interest loans to make infrastructure improvements.

Even with financial assistance from the DWSRF, the Agency's September 2002 report on the infrastructure gap identifies a multi-billion dollar gap in capital infrastructure financing over the next 20 years. In recognition of this shortfall, EPA will continue to provide infrastructure grants to capitalize DWSRFs. EPA will also work with states to assure that funds are effectively managed and with water systems to encourage them to adopt sustainable management systems.

In a related effort, EPA will work with other federal agencies to develop a coordinated approach to improving access to safe drinking water. The 2002 World Summit in Johannesburg adopted the goal of reducing the number of people lacking access to safe drinking water by 50 percent by 2015. EPA will contribute to this work through its support for development of drinking water facilities in Indian country and Alaskan native villages, using set-aside funds from the DWSRF and targeted grants. Other federal agencies, such as the Department of Interior (DOI) and the U.S. Department of Agriculture (USDA), also play key roles in addressing this problem. In addition,

Mexico Border infrastructure projects, described under Goal 4: Healthy Communities and Ecosystems, will also increase access to safe drinking water.

Prevent Source Water Contamination

There is growing recognition that protecting the quality of sources of drinking water, including surface waters and groundwater, can reduce violations of drinking water standards. EPA will support source water protection through training and technical assistance to states, tribes, and communities that are taking voluntary measures to prevent or reduce contamination of source water. The Agency will foster coordination of contamination prevention strategies across jurisdictions, and will also work with states and tribes to use Clean Water Act authorities to prevent contamination of surface waters that serve as public water supplies and are at high risk.

In a related effort, EPA will protect ground water that is a source of drinking water by assuring safe underground injection of waste materials. EPA will continue working with states and tribes to educate and assist underground injection control well operators; working with industry and stakeholders to collect and evaluate data on endangering Class V wells; and exploring best management practices for protecting underground sources of drinking water.

Safe Fish and Shellfish

Some toxic contaminants that enter waterbodies can move up the food chain and build up to levels that make fish unsafe to eat. States and tribes report they have issued fish consumption advisories for some 14 percent of river miles and 28 percent of lake acres. Shellfish also can accumulate disease-causing microorganisms and toxic algae. In 1995, shellfishing was prohibited due to pollution in 11 percent of the approximately 25 million acres that support shellfishing. EPA is working with states, tribes, and other federal agencies to improve water and sediment quality so all fish and shellfish are safe to eat and to protect the public from consuming fish and shellfish that pose unacceptable health risks.

Fish Safe to Eat

Most fish consumption advisories today are issued because of unhealthy levels of mercury in fish. Although small amounts of mercury are discharged to waters, most mercury in fish originates from combustion sources, such as coal-fired power plants and incinerators, which release it into the air. The mercury is then deposited by rainfall onto land and water, where it is concentrated in waterbodies and moves up the food chain through fish to people. EPA is working to reduce releases of mercury to the air through controls on combustion sources. For example, EPA expects that by 2010, federal market-based and other air regulatory programs will reduce electric generating unit emissions of mercury by 22

tons from their 2000 level of 48 tons (see Goal 1 of this Strategy).

Improving water and sediment quality is another key element of the strategy for making more fish safe to eat. Implementation of Clean Water Act programs will improve water quality by reducing discharges from storm water systems, combined sewer overflows, and concentrated animal feeding operations (CAFOs), and reducing runoff from nonpoint sources.

These water quality programs rely on sound scientific information concerning individual contaminants in fish. EPA recently issued a criteria document under the Clean Water Act identifying the safe levels of mercury in fish tissue and will help states and tribes adopt the criterion into water quality standards. EPA expects that all states and authorized tribes will have adopted the new mercury fish tissue criterion by 2008. In 2000, EPA revised the methodology for calculation of "human health criteria" for contaminants found in surface waters. This new methodology reflects recent research on the health effects of contaminants and the potential for contaminants in water to be concentrated in the food chain and pose a greater risk to people who consume fish. EPA partially recalculated the criteria for 83 pollutants and will be revising these criteria and additional criteria more completely over the next several years.

EPA is also working to restore the quality of aquatic sediment in critical waterbodies, with special emphasis in the Great Lakes. In addition, EPA will use Superfund program authorities to restore the quality of sediment. To reduce the potential for future sediment contamination, EPA is working to reduce the use of PCBs, a major sediment contaminant, in electrical equipment. (See Goal 4: Healthy Communities and Ecosystems.)

Another key element of EPA's strategy for safe fish is expanding the amount and type of information about fish safety and making this information available to the public. EPA provides guidance to states and tribes on monitoring and fish sampling. EPA also provides funding and technical training to help states and tribes assess fish safety in more of their waters every year. The Agency expects that by 2008, the percentage of rivers and lakes monitored for fish safety will continue to increase. EPA is also conducting a nationwide survey of contamination in fish.

A key public information tool is the internet-based National Listing of Fish and Wildlife Consumption Advisories. This website allows states and tribes to enter their advisories and provides the public with information about the location of advisories, the fish that are affected, and the number of meals or amount of fish that a person can safely eat.

Shellfish Safe to Eat

The safety of shellfish is managed through a partnership of the U.S. Food and Drug

Administration (FDA), the Interstate Shellfish Sanitation Commission (ISSC), and coastal states. States monitor shellfishing waters and restrict harvesting if shellfish taken from the waters would be unsafe.

Although there is a sound system to monitor the condition of shellfishing waters and limit public exposure to unsafe shellfish, shellfish harvesting is restricted in many acres of otherwise productive shellfishing waters. EPA is working with states, FDA, ISSC, and the National Oceanic and Atmospheric Administration (NOAA) to increase the percentage of shellfishing acres where harvesting is permitted from the estimated 1995 level of 77 percent to 85 percent in 2008.

Over the past several years, the ISSC, working with states and federal agencies, has developed a new information system that uses state monitoring data to pinpoint areas where shellfishing has been restricted. Using this information system, EPA and states will more readily be able to identify possible sources of pollutants restricting the use of shellfishing waters. This information can be used to strengthen water pollution control activities, including development of watershed plans, implementation of National Estuary Program plans, issuance or reissuance of permits to point sources, enforcement of existing permits, and implementation of controls over diffuse sources of polluted runoff.

Safe Swimming Waters

Recreational waters, especially beaches in coastal areas and the Great Lakes, provide outstanding recreational opportunities for many Americans. Swimming in some recreational waters, however, can pose a serious risk of illness as a result of exposure to microbial pathogens. Beach closures to protect the public from harmful levels of pathogens can have significant economic impacts. In some cases, these pathogens can be traced to sources such as sewage treatment plants, malfunctioning septic systems, and discharges from storm water systems and animal feeding operations. EPA is implementing a three-part strategy to protect the quality of the Nation's recreational waters. The Agency will work to protect recreational water generally, control combined sewer overflows, and protect the quality of public beaches along the coasts and Great Lakes.

Protect Recreational Waters

The first element of the strategy is broadly focused on all recreational waters. To protect and restore these waters, EPA works with state, tribal, and local governments to implement the core programs of the Clean Water Act. For example, development and implementation of total maximum daily loads (TMDLs) will generally benefit recreational waters that are impaired. The continuing implementation of the discharge permit program, urban storm water controls, and nonpoint pollution control programs will also reduce pollution to recreational waters. As part of this effort, EPA will work with states to assure that pathogen controls consistent with water quality standards are incorporated in 50 percent of permits for facilities that discharge pathogens.

Control Combined Sewer Overflows

Full implementation of controls for overflows from combined storm and sanitary sewers, or "CSOs," is another key step in protecting recreational waters. These overflows release untreated sewage containing high levels of pathogens. CSOs, which occur in about 770 communities around the country, can have a significant impact on the quality of recreational waters. EPA, states, and local governments are making steady progress toward the reduction of overflows under the "CSO Policy." Most communities with CSOs have now implemented basic control measures. Some 34 percent of these communities have developed long-term plans for control of overflows and 87 percent of these communities have substantially implemented their plans. EPA hopes to increase the percentage of communities that have developed long-term control plans.

Protect Coastal and Great Lakes Beaches

The third element of the strategy to protect and restore recreational waters is focused on public beaches in coastal areas and the Great Lakes. Under the recently enacted Beaches Environmental Assessment and Coastal Health (BEACH) Act, EPA provides grants to state, tribal, and local governments for programs to monitor beach water quality and notify the public when bacterial contamination poses a risk to swimmers. EPA expects that 100 percent of significant public beaches will be managed under BEACH Act programs by 2008.

The BEACH Act requires that coastal and Great Lakes states adopt scientifically sound water quality criteria for bacteria. EPA expects that all 35 coastal and Great Lakes states will have adopted scientifically sound bacteria criteria for beaches by 2008. As a result of a related effort, Agency-approved analytic methods will be available for pathogens of concern at beaches.

Finally, EPA will continue to expand public access to internet-based beach information on its website. Governments receiving BEACH Act grants and communities responding to EPA's annual National Beach Health Protection Survey will provide information on water quality, beach monitoring and advisory programs, and beach closures.

Objective 2: Protect Water Quality. By 2008, protect the quality of rivers, lakes and streams on a watershed basis and protect coastal and ocean waters.

Sub-objective 2.2.1: Improve Water Quality on a Watershed Basis. By 2008, use both pollution prevention and restoration approaches, so that:

– in 700 of the Nation's watersheds, water quality standards are met in at least 80% of

the assessed water segments (2002 Baseline: 510 watersheds of the total 2,262 USGS cataloguing unit scale watersheds across the Nation); and

– in 200 watersheds, all assessed water segments maintain their quality and at least 20% of assessed water segments show improvement above conditions as of 2002. (2002 Baseline: 0 USGS cataloguing unit scale watersheds).

Strategic Targets:

- Restore Water Quality: By 2008, reduce pollution from all types of sources as needed to restore polluted waters so that water quality standards are fully attained in over 10% of those water bodies/segments identified in 2000 as not attaining standards. (2002 Baseline: 0% of the 22,000 individual water bodies identified on 1998/2000 lists of impaired waters developed by States and approved by EPA under section 303(d) of the Clean Water Act.)

- Reduce Nutrient Levels in Rivers: By 2008, implement pollution reduction programs as needed to reduce levels of phosphorus contamination in rivers and streams so that phosphorus levels are below levels of concern established by USGS or levels adopted by a state or authorized tribe in a water quality standard in:

  – 55% of test sites for major rivers (1992-98 Baseline: 50%)
  – 38% of test sites for urban streams (1992-98 Baseline: 33%); and
  – 30% of test sites for farmland streams (1992-98 Baseline: 25%).

- Improve Tribal Waters: By 2008, water quality in Indian country will be improved at not less than 90 monitoring stations in tribal waters for which baseline data are available (i.e., show at least a 10% improvement for each of four key parameters: total nitrogen, total phosphorus, dissolved oxygen, and fecal coliforms.) (2002 Baseline: four key parameters available at 900 sampling stations in Indian country)

- Improve Access to Basic Sanitation: By 2008, reduce by xx% the number of households on tribal lands or in Alaskan Native Villages lacking access to basic sanitation. (2000 Baseline: U.S. Census data indicate that xx% of households lack access to complete plumbing including hot and cold piped water, flush toilet, or a bathtub/shower.)

Sub-objective 2.2.2: Improve Coastal and Ocean Waters. By 2008, prevent water pollution and protect aquatic systems so that overall aquatic system health of coastal waters nationally, and in each coastal region, is improved on the "good/fair/poor" scale of the National Coastal Condition Report by at least 0.2 points. (2002 Baseline: National rating of "fair/poor" or 2.4 where the rating is based on a 5-point system where 1 is poor and 5 is good and is expressed as an aerially weighted mean of regional scores using the National Coastal Condition Report indicators [i.e., water clarity, dissolved oxygen, coastal wetlands loss, eutrophic conditions, sediment contamination, benthic health, and fish tissue contamination].)

Strategic Targets:

- Maintain Key Coastal Conditions: By 2008, maintain water clarity and dissolved oxygen in coastal waters at the national levels reported in the 2002 National Coastal Condition Report. (2002 Baseline: 4.3 for water clarity; 4.5 for dissolved oxygen).

- Improve Key Coastal Conditions: By 2008, improve ratings reported on the national "good/fair/poor" scale of the National Coastal Condition Report for:

  – coastal wetlands loss by at least 0.2 points (2002 Baseline: 1.4)

  – contamination of sediments in coastal waters by at least 0.2 points (2002 Baseline: 1.3);

  – benthic quality by at least 0.2 points (2002 Baseline: 1.4); and

  – eutrophic condition by at least 0.2 points (2002 Baseline: 1.7).

- Invasive Species Control: By 2012, in cooperation with other Nations, other Federal agencies, and state and local governments, significantly reduce the annual rate of introduction of non-indigenous, invasive, aquatic species to waters of the United States. (2002 Baseline: 2002 baseline under development for 2004 in cooperation with the Federal National Invasive Species Council.)

Means and Strategies to Achieve Objective 2

Improving Water Quality on a Watershed Basis

In order to protect and improve water quality on a watershed basis, EPA will focus its work with states, tribes, and others in six key areas: (1) strengthen the water quality standards program; (2) improve water quality monitoring; (3) develop effective watershed plans and TMDLs; (4) implement effective nonpoint pollution control programs; (5) strengthen the NPDES permit program; and (6) effectively manage infrastructure assistance programs.

EPA expects to work with states and tribes in each of these areas, but progress toward water quality improvements will largely depend on success in integrating programs on a watershed basis, engaging diverse stakeholders in solving problems, and applying innovative ideas, such as water quality trading, to deliver cost-effective water pollution control.

Strengthen the Water Quality Standards Program

State and tribal water quality standards provide the environmental baselines for water quality programs. EPA provides scientific information concerning contaminants in the form of "water quality criteria" guidance and identifies innovative approaches to support state and tribal adoption of water quality standards that protect water for uses such as swimming, public water supply, and fish and wildlife.

The Water Quality Standards and Criteria Strategy, developed in cooperation with states, tribes, and the public and published in March of 2003, will provide a foundation for EPA's work to strengthen state and tribal water quality standards programs. Over the next five years, the Strategy calls for EPA to develop implementation guidance for new and existing water quality criteria; develop a criteria methodology for waterbody sedimentation; develop a revised aquatic life criteria methodology; publish additional nutrient criteria (for example, for coastal waters and wetlands) and provide implementation guidance; and promote increased use of biological criteria and ecological evaluation to support assessment of water conditions on a watershed scale.

In addition, the Strategy identifies some key efforts to strengthen the program in the coming years, including developing nutrient standards, adopting biological criteria, and assisting tribal governments in adopting water quality standards. Finally, EPA will work with states and tribes to assure the effective operation and administration of the standards program. For example, all states and authorized tribes are expected to review and revise their standards every 3 years as required by the Clean Water Act. In addition, EPA will promptly review and approve or disapprove changes to standards as required by the Act.

Improve Water Quality Monitoring

Scientifically defensible data and information are essential tools in the Information Age. Water quality monitoring and assessment programs, the essential underpinning of all aspects of the watershed approach, must be strengthened and upgraded across the country.

Over the next 5 years, EPA will assist states and tribes in significantly improving information concerning the condition of the Nation's rivers, lakes, and streams. In this effort, EPA will work with states and tribes to adopt comprehensive monitoring strategies, addressing all the elements essential to an effective monitoring program, and statistically valid monitoring networks, leading to a doubling in the percentage of stream miles evaluated with sufficient water quality data. EPA will also encourage development of biological monitoring programs and transmittal of state monitoring data to the STORET national water quality data repository. This monitoring work will be coordinated with assessments of fish tissue contamination, the condition of water at beaches, and the condition of coastal waters.

Develop Effective Watershed Plans and TMDLs

EPA is working with states and tribes to foster a "watershed approach" as the guiding principle of clean water programs. EPA is encouraging states to develop watershed plans with a comprehensive approach to assessing water quality, defining problems, integrating management of diverse pollution control, and financing projects. States have successfully adopted watershed approaches that use a "rotating basin" approach as well as other methods. Where necessary, states will upgrade their continuing planning process to assure development of a watershed approach. EPA is also working with tribes to support development of watershed approaches to protecting tribal waters.

EPA is also supporting the development of watershed plans in specific geographic areas. In addition to continuing watershed protection programs as part of the National Estuary Program, the Chesapeake Bay Program, the Great Lakes Program, and the Gulf of Mexico Program, EPA has provided grants for watershed plans in recent years and is beginning a major new watershed grant program in 2003. EPA expects to continue supporting development of watershed-based plans in key watersheds over the next 5 years.

In watersheds where water quality standards are not attained, states will be developing TMDLs. Some impaired waters are isolated segments that can be addressed individually. The vast majority of impaired waters, however, are clustered on a watershed basis. EPA is encouraging states to develop TMDLs for these waters on a watershed basis. Watershed-based TMDLs are less expensive to develop and create the opportunity for innovations such as water quality trading and watershed-based permitting. Trading is a valuable tool allowing pollution sources to share pollution control responsibility within a watershed and achieve pollution reductions at the lowest possible cost.

While supporting state watershed plans, EPA will continue work with states to develop TMDLs consistent with state TMDL development schedules and court-ordered deadlines. States and EPA have made significant progress in the development and approval of TMDLs and expect to maintain the current pace of about 3000 TMDLs per year.

Control Nonpoint Pollution

Watershed plans and TMDLs will focus pollution control efforts for impaired waters on a range of pollution sources, including runoff from nonpoint sources. EPA will complement the efforts of states, tribes, and other federal agencies to implement management practices that will reduce levels of nonpoint pollution nationwide.

A critical step in this effort is for EPA to forge strategic partnerships with a broad range of agricultural interests at all levels. EPA will work with USDA to ensure that EPA and USDA target their resources in complementary ways—EPA's Section 319 funds to restore impaired watersheds and Farm Bill dollars to implement practices to protect water quality more broadly. EPA will also work cooperatively with USDA to develop voluntary nutrient management plans for animal feeding operations (small operations not covered by regulations) and to implement riparian and stream bank protection measures over the next 5 years.

In related efforts, EPA will collaborate with state managers of Clean Water Revolving Loan Funds to increase investments in projects to reduce nonpoint pollution. Properly managed onsite/decentralized systems are an important part of the Nation's wastewater infrastructure, and EPA will encourage state, tribal, and local governments to adopt voluntary guidelines for the effective management of these systems and use Clean Water Revolving Loan Funds to finance systems where appropriate.

Strengthen the NPDES Permit Program and Implement the National Industrial Regulation Strategy

The National Pollution Discharge Elimination System (NPDES) requires point source dischargers to be permitted and pretreatment programs to control discharges from industrial facilities to the Nation's sewage treatment plants. This program provides a management framework for millions of gallons of effluent discharged to waters each year. EPA has five key strategic objectives for the program over the next 5 years: (1) assure effective management of the permit program, including focus on permits that have the greatest benefit for water quality; (2) implement wet weather point source controls, including the storm water program; (3) implement the newly developed program for permits at CAFOss; (4) advance program innovations, such as watershed permitting and trading; and (5) develop national industrial regulations for industries where the risk to waterbodies supports a national regulation.

To address concern about the backlog in re-issuance of NPDES permits, in 2002 EPA developed the "Permitting for Environmental Results Strategy." The Strategy focuses limited resources on the most critical environmental problems and targets four key areas: (1) increased environmental focus through permit prioritization and watershed-based permitting; (2) efficiency to maximize resources, such as electronic tools for permit applications and automation of the permit writing process; (3) increased quality and quantity of data necessary to assess and maintain program health through modernization of the Permits Compliance System and integration with other environmental databases; and (4) accountability in program management, using periodic permit quality reviews, a permit quality checklist, and permit writer training.

EPA is working with states and other interested parties to strengthen the permit program in two key areas: discharges of storm water and discharges from large animal feeding operations. Over the next 5 years, EPA expects that 100 percent of regulated industrial facilities and construction sites and 90 percent of regulated municipalities will be covered by storm water permits. In 2002, EPA finalized new rules for discharges from CAFOs. Currently about 4,500 CAFOs are covered by permits; up to 11,000 additional facilities will be required to apply for permits by 2006. Implementation of the new rule will have significant water quality benefits.

In addition, EPA expects that by 2008, at least 90 percent of significant industrial users that discharge to publicly owned treatment works under the pretreatment program will have individual control mechanisms implementing technically based local limits.

Most industrial facilities discharging directly to waterbodies or to sewage treatment plants have permit limits or pretreatment controls based on national regulations developed for the class of industrial activity. Most major industrial classes now have regulations in place. Over the next 5 years, EPA will complete national regulations now under development (covering, for example, meat production, construction and development sites, aquaculture farms, and large cooling water intakes). In consultation with the public, EPA will also establish program priorities based on sound science and demonstrated benefits, including the potential for cost-effective risk reduction. In addition to evaluation of regulatory options, EPA will consider other approaches (including clarifying guidance, environmental management systems, and permit writer support).

Support Sustainable Wastewater Infrastructure

Much of the dramatic progress in improving water quality is directly attributable to investment in wastewater infrastructure—the pipes and facilities that treat the Nation's sewage. But the job is far from over. Communities are challenged to find the fiscal resources to replace aging infrastructure, to meet growing infrastructure demands fueled by population growth, and to secure their infrastructure against threats.

Clean Water State Revolving Funds (CWSRFs) provide low interest loans to help finance wastewater treatment facilities and other water quality projects. These projects are critical to the continuation of the public health and water quality gains of the past 30 years. As of early 2003, the federal government had invested almost $20 billion in CWSRFs. The revolving nature of the funds and substantial additions from states have magnified that investment so that a cumulative total of $42.4 billion has been available for loans. Recognizing the substantial remaining need for wastewater infrastructure, EPA expects to continue to provide significant annual capitalization to CWSRFs for the foreseeable future. This continued federal investment in CWSRFs, along with other traditional sources of financing (including increased local revenues), will result in significant progress toward addressing the Nation's wastewater treatment needs.

Over the next 5 years, EPA will work with CWSRFs to meet several key objectives: fund projects designed as part of an integrated watershed approach; link projects to environmental results through the use of scientifically-sound water quality and public health data; support development of integrated priority lists addressing nonpoint pollution and estuaries protection projects as well as wastewater projects; and maintain the CWSRF's excellent fiduciary condition.

Another important approach to closing the gap between the need for clean water projects and available funding is to use sustainable management systems to assure that infrastructure investments are tailored to the needs of the watershed, well capitalized, and well maintained. Sustainable management systems prolong the lives of existing systems and provide Americans with purer water at lower cost. EPA will work to institutionalize sustainable management systems and will also encourage rate structures that lead to full cost pricing and support water metering and other conservation measures.

In addition, EPA will continue to promote environmental management systems, especially for public agencies, that focus on improved compliance, environmental performance beyond compliance, and pollution prevention. Response to date is very positive, and support for adoption of environmental management systems in the public sector is growing rapidly.

In a related effort, EPA will work with other federal agencies to improve access to basic sanitation. The 2002 World Summit in Johannesburg adopted the goal of reducing the number of people lacking access to safe drinking water by 50 percent by 2015. EPA will contribute to this work through its support for development of sanitation facilities in Indian country and Alaskan native villages using funds set aside from the CWSRF and targeted grants. Other federal agencies, such as DOI and USDA, also play key roles in addressing this problem. In addition, Mexico Border infrastructure projects, described under Goal 4: Healthy Communities and Ecosystems, will improve access to basic sanitation.

Improving Coastal and Ocean Waters

Coastal and ocean waters are environmentally and economically valuable to the Nation. Key programs focused on coastal waters and critical to improving these waters are: assessing coastal conditions; reducing vessel discharges; controlling coastal nonpoint pollution; managing dredged material; managing non-indigenous invasive species; and supporting international marine pollution control.

In addition, coordinating our efforts with those of other federal agencies, states, tribes, and public and private parties is essential. Improving coastal waters will depend on successful implementation of pollution controls in inland watersheds. (See Sub-objective 1 under this Objective.) Progress in protecting and restoring coastal waters is also directly tied to geographically focused projects, such as the Chesapeake Bay Program, the Gulf of Mexico Program, and the National Estuary Program. These programs are described under Goal 4: Healthy Communities and Ecosystems.

Assessing Coastal Conditions

Progress in meeting these strategic targets will be tracked through the National Coastal Condition Report, created in 2002 as a cooperative project of EPA, NOAA, USDA, and DOI. The Report describes the ecological and environmental condition of U.S. coastal waters according to seven key parameters. EPA and other federal agencies will review changing conditions and periodically issue updated assessments of the health of coastal waters.

Reducing Vessel Discharges

A focus of EPA's efforts to improve the health of the Nation's ocean and coastal waters will be to enhance regulation of discharges of pollution from vessels. Key work includes development of discharge standards for cruise ships operating in Alaskan waters; cooperation with the Department of Defense to develop discharge standards for certain armed forces vessels; and cooperation with the Coast Guard to revise performance standards for marine sanitation devices to reduce sewage discharges from vessels.

Controlling Coastal Nonpoint Pollution

Rapid population growth in coastal areas can result in significant increases in pollution from both point and nonpoint sources. For the past 10 years, EPA and NOAA have been working with coastal and Great Lakes states to improve and expand programs to control nonpoint pollution in the "coastal zone" identified by states. Most states have used federal grant funds to develop coastal nonpoint programs, and EPA and NOAA are working with the remaining states to complete the program by providing continued support and assistance. These nonpoint control programs, focused on the critical

coastal zone areas, will play an important role in accomplishing the environmental improvements sought for coastal waters by 2008.

Managing Dredged Material

Several hundred million cubic yards of sediment are dredged from waterways, ports, and harbors each year to maintain the Nation's navigation system for commercial, national defense, and recreational purposes. All of this sediment must be disposed of safely. EPA and the U.S. Army Corps of Engineers (COE) share responsibility for regulating how and where it is done. EPA and COE will focus additional resources on improving the way disposal of dredged material is managed, including evaluating disposal sites, designating and monitoring the sites, and reviewing and concurring on the disposal permits issued by COE.

EPA is also working with its state partners and other federal agencies, including COE, the Fish and Wildlife Service, and the Coast Guard, to ensure that comprehensive dredged material management plans, which include provisions for the beneficial re-use of dredged material, are developed and implemented in major ports and harbors.

Managing Invasive Species

One of the greatest threats to U.S. waters and ecosystems is the uncontrolled spread of invasive species. Invasive species commonly enter U.S. waters through the discharge of ballast water from ships. Although the majority of these organisms never become established in a new ecosystem, an increasing number of invasive species are adversely impacting the environment and local economies and posing risks to human health. In response, EPA is assisting the U.S. Coast Guard in its efforts to develop ballast water exchange requirements and ballast water discharge standards to control aquatic invasive species and is addressing this issue at the international level. Negotiations are currently underway for a global treaty designed to prevent further introductions of invasive aquatic species through ballast water.

Supporting International Marine Pollution Control

EPA works closely with the Coast Guard, NOAA, and the Department of State to address environmental threats to U.S. waters that require international cooperation. Recognizing the effect of international shipping on the quality of the U.S. waters, EPA is heavily involved in the negotiation of international standards at the International Maritime Organization. These international standards are the principal mechanism EPA is using to address invasive aquatic species, tributyltin and other harmful antilfoulants, and marine debris. EPA is also engaged in cooperative efforts to reduce other sources of

pollution affecting the Gulf of Mexico, Great Lakes, Arctic Ocean, Straits of Florida, and the Wider Caribbean Basin.

Objective 2.3: Science/Research. By 2008, provide and apply a sound scientific foundation to EPA's goal of clean and safe water by conducting leading-edge research and developing a better understanding and characterization of environmental outcomes under Goal 2.

> **Sub-objective 2.3.1: Science.** By 2008, apply the best available science (i.e., tools, technologies and scientific information) to support Agency regulations and decision making for current and future environmental and human health hazards related to reducing exposure to contaminants in drinking water, fish and shellfish, and recreational waters and the protection of aquatic ecosystems.
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> **Sub-objective 2.3.2: Research.** By 2008, conduct leading-edge, sound scientific research to support the protection of human health through the reduction of human exposure to contaminants in drinking water, in fish and shellfish, and in recreational waters and to support the protection of aquatic ecosystems, specifically, the quality of rivers, lakes and streams and coastal and ocean waters.

Means and Strategies to Achieve Objective 3

Clean and Safe Water Science

Meeting the goal of clean and safe water requires that EPA effectively apply basic research findings to the specific needs of water programs. The Agency will draw on the results of basic research to prove and refine existing conclusions about the drinking water safety and water quality. Critical, scientific aspects of water program research include development of analytic test methods to support programs' scientific integrity; laboratory certification; and analysis of questions more commonly thought of as "social science," such as the costs and benefits of safe drinking water and healthy aquatic ecosystems.

Analytic Test Methods

EPA establishes analytic test methods that describe laboratory procedures for measuring contaminant levels in drinking and surface waters. In some cases, EPA itself develops methods; in other cases, the Agency approves alternative test procedures. Approximately 550 EPA-approved analytical methods exist for nearly 300 contaminants. These test methods support the development of

drinking water standards, surface water quality criteria and standards, industrial discharge regulations, water monitoring, discharge permitting, pretreatment, and compliance.

EPA has several goals for the improving the analytic methods program over the next 5 years. These include reducing the backlog of applications for approval of alternative test procedures, many involving new technology; developing new analytic methods that support increasingly more stringent levels of protection for some contaminants; and making analytic methods readily available to the public through a new web-based system.

Laboratory Certification

To ensure a sound scientific basis for determining whether a system has complied with EPA's drinking water standards, each drinking water regulation incorporates quality control and testing procedures for the laboratories that analyze drinking water samples for contaminants. EPA's Drinking Water Laboratory Certification Program evaluates whether Agency, state, and privately owned laboratories are analyzing drinking water samples accurately using approved laboratory methods and procedures, and are properly implementing quality assurance plans. Only certified laboratories may analyze drinking water samples.

Over the next 5 years, EPA will work to ensure that laboratories are appropriately classified as "certified," "provisionally certified," "interim certified," or "not certified." In making certification decisions, EPA will consider laboratory certification criteria, on-site audits conducted at least once every 3 years, and analysis of test samples.

Methods for Valuing Ecological and Recreation Benefits

A related scientific effort is development of improved methods to assess and value ecological and recreational benefits that result from improvements in water quality. EPA is supporting studies of the monetary value of cleaner water for aquatic life and other ecological and recreational benefits, such as boating, and will use this information to develop more precise estimates of the benefits of water pollution control programs and requirements. This economic work is discussed in greater detail in Appendix 1.

Clean and Safe Water Research

EPA's water research program enables EPA to pursue its objectives for protecting human health and water quality. The Agency's Office of Research and Development (ORD) has developed multi-year plans for drinking water and water quality that describe the research it will conduct over the next 5 to 10 years.

Research to Protect Human Health

The Safe Drinking Water Act Amendments of 1996 direct EPA to conduct research to strengthen the scientific foundation for standards that limit public exposure to drinking water contaminants. The Amendments contain specific requirements for research on waterborne pathogens, such as cryptosporidium and Norwalk virus; disinfection byproducts; arsenic; and other harmful substances in drinking water. EPA is also directed to conduct studies to identify and characterize population groups, such as children, that may be at greater risk from exposure to contaminants in drinking water than is the general population.

EPA's multi-year plan for drinking water research establishes five long-term goals. Within the 5-year scope of this *Strategic Plan*, we will:

- Develop scientifically sound data and approaches to assess and manage risks to human health posed by exposure to regulated waterborne pathogens and chemicals, including those covered by the Microbial/Disinfection Byproduct, Arsenic, and Six-Year Review rules;

- Develop scientifically sound data and approaches to assess and manage risks to human health posed by exposure to specific unregulated waterborne pathogens and chemicals on the Contamination Candidate List;

- Develop innovative tools, improved technologies, and new data to support regulatory decision-making and the implementation of rules by states, local authorities, and utilities;

- Provide data, tools, and technologies to support EPA, state, and local management decisions for protecting source waters and water quality in the distribution system.

Research to Protect Water Quality

The water quality research program provides approaches and methods the Agency and its partners need to develop and apply criteria to support designated uses, tools to diagnose and assess impairment in aquatic systems, and tools to restore and protect aquatic systems. Water quality research addresses a wide spectrum of aquatic ecosystem stressors. However, particular attention is accorded to stressors that the Agency most often cites as causing water body impairment: embedded and suspended sediment, nutrients, and pathogens and pathogen indicators.

EPA's multi-year plan for water quality research establishes four long-term goals, three of which represent research to be conducted in support of clean and safe water. (The fourth long-term research goal, which focuses on exposures to and health risks presented by biosolids, is reflected under

the Agency's Goal 3, Preserve and Restore the Land.) Within the 5-year scope of this *Strategic Plan*, we will:

- Provide approaches and methods to develop and apply criteria for habitat alteration, nutrients, suspended and bedded sediments, pathogens, and toxic chemicals that will support designated uses for aquatic systems;

- Provide the tools to assess and diagnose the causes and pollutant sources of impairment in aquatic systems;

- Provide the tools to restore and protect impaired aquatic systems and to forecast the ecological, economic, and human health benefits of alternative approaches to attain water quality standards.

HUMAN CAPITAL STRATEGY

Achieving clean and safe water goals will require strengthening the Agency's human capital—the knowledge, skills, and abilities that EPA's workforce needs to implement core water programs. Over the next 5 years, the Agency will concentrate on three human capital priorities in addressing clean and safe water goals: recruiting a highly talented workforce that reflects the diversity of the American citizenry; strengthening the skills and abilities of the current workforce; and training state, tribal, and local water program managers who operate core water programs.

Over the next 5 years, our existing EPA water program workforce will be increasingly eligible for retirement. To meet the present and future challenges of improving our Nation's waters, EPA will need to recruit and train a significant number of highly qualified individuals to replace those who retire and to meet the demands of an evolving water program. EPA water programs will strengthen recruitment planning and focus efforts in key areas. For example, the Agency will need scientists to assist in establishing drinking water standards and developing criteria contaminants for surface water quality. EPA will also focus on recruiting environmental specialists to help protect and restore a diverse environment that ranges from upstream wetlands to marine and ocean ecological systems. In addition, we will enhance staffing to support economic analysis, thereby improving our understanding of the cost and benefits of future regulations.

EPA will use a variety of training and development programs to strengthen the knowledge, skills, and abilities of its current workforce. The foundation of this training effort is the "Water Careers Program." This career development program builds traditional and career development skills, and addresses non-traditional areas such as community development and effective listening. These skills are

essential for development and implementation of TMDLs to restore impaired waters, supporting our strategy for safe swimming in recreational waters and improved water quality on a watershed basis.

EPA "core competencies" will be addressed in all training, with special emphasis on areas identified by the Workforce Assessment Project as gaps between EPA's current skills inventory and those needed to meet the challenges of providing clean and safe water. These steps will allow EPA to develop and retain a skilled workforce by providing employees with opportunities for learning and professional growth through mentoring programs and developmental assignments.

Finally, the Agency's water program will continue to provide a diverse range of training programs for our partners: states, tribes, and local governments. For example, the seminar, "Watershed Partnerships: Collaboration for Environmental Decision Making," emphasizes building community-based partnerships and decision making within watershed areas. Seminars of this caliber develop skills and abilities that are key to both large- and small-scale geographic watershed protection. Other successful training programs include the Drinking Water Academy, the Watershed Academy, the Water Quality Standards Academy, and the NPDES Permit Writer's Course. The Agency will promote staff exchanges with federal agencies such as USDA and will provide inter-governmental staff assignments to state and tribal partners.

PROGRAM EVALUATION

Over the past 3 years, the national water program has been the subject of numerous internal and external program evaluations, audits, and reviews. The Agency routinely reviews the results of these studies and incorporates any relevant recommendations into its program processes and strategies. The following completed program evaluations influenced the development of the architecture and strategies for Goal 2.

An Assessment of Water Quality Standards Review and Development Process (EPA's Office of Science and Technology, 2000). The Office of Water conducted an assessment of the processes developed by a selected number of states in developing water quality standards and the EPA regional office efforts to review them. The results of the assessment contributed to the development of the *Strategic Plan* by helping establish new draft Program Activity Measures for developing clear and consistent national guidance on water quality criteria and standards, formulating a multi-year Strategy for Water Quality Standards and Criteria, and improving coordination among EPA, states, and federal agencies.

Assessing the TMDL Approach to Water Quality Management. (National Academy of Sciences, National Research Council, 2001) Congress directed EPA to contract with the

National Academy of Sciences of the National Research Council, to review the quality of the science used to develop TMDLs. The study found that program changes should be made to better account for scientific uncertainties, to improve water quality standards and monitoring programs, and to employ adaptive implementation. Most importantly, this study (along with our own understandings of current state programs) helped support our strategic thrust to place more emphasis on working with states in upgrading their ambient water quality monitoring and assessment.

2002 National Estuary Program (NEP) Implementation Review. (EPA's Office of Wetlands, Oceans, and Watersheds, 2002). The purpose of this evaluation was to assess the progress made by 19 of 28 NEPs in implementing their Comprehensive Conservation Management Plans developed under Section 320 of the Clean Water Act. The findings are used to determine whether an estuary program is eligible for continued funding under Section 320. The Review provided a comprehensive assessment of progress in meeting programmatic objectives as well as environmental improvement in the estuaries. In particular, the ability of the NEPs to restore and protect habitat was assessed, resulting in a measure for habitat protection. Key elements in the review were an assessment of how priority action plans are implemented and who is going to pay, resulting in our including finance plans and leveraging goals in the *Strategic Plan*.

A Review of Statewide Watershed Management Approaches. (EPA's Office of Wetlands, Oceans, and Watersheds, 2002) EPA's Office of Water conducted an evaluation of eight states' experiences with different models of the statewide watershed management approach. The study focused on the impact of the watershed approach on federal and state program management and coordination, public involvement, and the implementation of six core programs under the Clean Water Act and Safe Drinking Water Act. Specific influences of this program evaluation on the *Strategic Plan* include: development of strategic goals that must be attained through contributions from programs that, historically, have been managed separately; development of integrated measures reflecting linkages between source water protection activities and water quality monitoring and TMDL programs; and establishment of a new ecosystem-based goal within the *Strategic Plan* hierarchy.

EXTERNAL FACTORS

EPA's strategies for achieving clean and safe water depend on substantial contributions and investments by many public and private entities.

States are primary partners in implementation of both clean water and safe drinking water programs. Many state water programs have been substantially underfunded to meet basic program needs. For example, funding gaps for state clean water programs are estimated at $735 to $960 million dollars per year, meaning that states are funding their water programs at roughly half of the estimated level of need. This problem is compounded by projected state budget deficits. For 2004, all but six states project a budget deficit, and several states project deficits equal or greater than 25 percent of their overall budgets. EPA recognizes that state budget shortfalls are an external factor that may limit progress toward clean and safe water goals.

Consistent with the federal government's unique trust responsibility to federally recognized tribes, EPA implements programs in Indian country, helps build tribal capacity to administer clean and safe water programs, and works with authorized tribes as co-regulators. Tribal resource needs are great. Unlike states, many tribes are still developing programs to administer clean and safe water programs. Lack of support in developing these programs will limit progress toward clean water goals.

Local governments play a critical role in implementing clean and safe water programs, and the continued participation of local government in these programs is critical to cleaner, safer water. Municipalities and other local entities have proven to be strong partners with states and the federal government in the financing of wastewater treatment and drinking water systems, and continued partnership in financing these systems is essential to meeting water goals. Despite sometimes significant resource limits, municipalities are also now taking on additional responsibilities for addressing storm water and combined sewer overflows. In the case of the drinking water program, effective local management of drinking water systems is essential to maintaining high rates of compliance with drinking water standards. Ninety-five percent of the 160,000 or more public water systems responsible for meeting drinking water safety standards are small systems that often struggle to provide safe drinking water. Supporting these local governments is a top priority for EPA.

Several key elements of the national water program, including nonpoint source control and watershed management, require broad partnerships among many federal, state, and local agencies. Over the next several years, building partnerships with the agricultural community (such as USDA, state agricultural agencies, and local conservation districts) is a top priority for meeting clean water goals. We must also continue to strengthen efforts to ensure that USDA's runoff control programs are effectively targeted.

EPA relies on many other agencies to provide monitoring data to measure progress toward its goal of clean and safe water. States lead the effort in water quality monitoring. Other agencies provide critical information as well, such as the U.S Geological Survey, which maintains water monitoring stations throughout the nation, and NOAA, which provides information on coastal waters. EPA relies on the continued collection of data by these agencies. EPA also relies on COE to implement Section

404 of the Clean Water Act. In fact, COE acts as the lead federal agency for permitting the disposal of dredged or fill material and dredged material management and disposal issues.

Finally, all of the EPA's coastal and oceans activities are carried out in partnership with other federal agencies, and, in some cases, international, state, local and private entities as well. EPA relies on its work with the Department of Defense, Coast Guard, Alaska and other states, and a number of cruise ship and environmental and non-governmental organizations regarding regulatory and non-regulatory approaches to managing wastewater discharges from vessels. Meeting ocean and coastal goals will also depend on the extent to which the growth in coastal areas is directed in ways that minimize effects on water quality.